## Remarks and Arguments

The Claim Amendments

Claims 1-3 and 5-30 are pending in this application, with Claims 29 and 30 withdrawn from consideration. Claim 1 has been amended in accordance with the Examiner's request, and Claims 29 and 30 have been canceled. Claims 1-3 and 5-28 remain.

The Rejection Under 35 U.S.C. §103(a)

The Examiner maintained his rejection of Claims 1-28 under 35 U.S.C. §103(a) as being unpatentable over Housley et al. (US 2001/0007910) in view of Lewis et al. (U.S. Patent No. 3,406,196). Applicants respectfully traverse the Examiner's rejection.

The Examiner maintained his rejection based on the reasons filed on September 28, 2007, and stated that Applicants addressed the issues, but did not rebut the claim rejections. Applicants respectfully wish to remind the Examiner that these rejections were rebutted in the Amendment dated November 20, 2007, and during the telephone interview on March 18, 2008. In fact, at the conclusion of the telephone interview, the Examiner said that Applicants did not have to repeat these arguments again in their Amendment in Response to Final Office Action (dated March 19, 2008), because agreement was reached that neither Housley et al. nor Lewis et al. teach or suggest improving oxygen utilization, and Lewis et al. do not disclose the use of an organic acid, as in the present invention. The Examiner indicated that adding and explaining claim amendments relating to "improved oxygen utilization" with a quantifiable value and solvent "comprising an organic acid" would be sufficient to overcome his rejections and that the claims, as amended, would be allowable. Accordingly, Applicants added the appropriate phrases to steps (a) and (b) of Claim 1 in their Amendment dated March 19, 2008.

On April 7, 2008, the Examiner called Applicants' attorney to request that "improved oxygen utilization" language also be added to the preamble of Claim 1 to ensure that the claims would be in condition for allowance, and Applicants' attorney immediately sent the proposed language to the Examiner via facsimile. Later that same day, however, the Examiner called Applicants' attorney again to say that he had not considered Spiller et al. (U.S. Patent No. 2,962,361) and that he could not allow the claims because Spiller et al. imply that their process achieves high oxygen utilization.

On April 11, 2008, a telephone interview was conducted between Applicants' attorney, Applicants Frank Belmonte, Allen Mossman and David Sikkenga, and Examiners Taylor Oh and Janet Andres. The interview was requested by Applicants for the purpose of discussing the new rejection based on Spiller et al. (and also Baldwin et al. (U.S. Patent No. 3,092,658), which is already prior art of record). Applicants thank the Examiner and his supervisor for their time and respectfully request allowance of the claims based on that discussion and the remarks and arguments contained herein. If the Examiner is of the opinion that the interview summary below is inaccurate in any way, he is respectfully requested to contact Applicants' attorney so that any correction may be addressed.

During the telephone interview, Applicants again explained how their inventive process improves oxygen utilization when the concentration of residual oxygen in the gas removed from the first oxidation stage is from about 0.3 to about 2 volume percent, without reducing the high quality of the dicarboxylic acid products produced. While the Examiner states in his Interview Summary that both Spiller et al. and Baldwin et al. are "potentially relevant to the claimed invention," as Applicants explained during the telephone interview, neither reference is relevant because they do not teach or suggest a concentration of residual molecular oxygen in the gas removed from the first oxidation stage of about 0.3 to about 2 volume percent to obtain improved oxygen utilization. Also, although both prior art references disclose that the gas phase should contain less that 8 to 9 percent oxygen, this maximum limit is taught simply to prevent possible explosion hazards (See col. 1, line 69 – col. 2, line 4 in Spiller et al. and col. 2, lines 1-8 in Baldwin et al.). Neither Spiller et al. nor Baldwin et al. (nor any of the other prior art of record) teach or suggest obtaining improved oxygen utilization when the concentration of residual molecular oxygen in the gas removed from the first oxidation stage is about 0.3 to about 2 volume percent. Furthermore, unlike Applicants' invention, neither Spiller et al. nor Baldwin et al. teach or suggest a process whereby a portion or all of the total amount of feed mixture is introduced into a second oxidation stage (this difference was discussed in greater detail in previous Responses and Amendments, such as the Response dated September 4, 2007).

The Examiner again cites page 3, lines 2-12 of Housley at al. in the current Office Action. As explained previously (See the Amendment dated September 4, 2007), unlike

Applicants' process, Housley et al. neither teach nor suggest recycling unreacted oxygen from the second oxidation stage to the first oxidation stage to obtain high oxygen utilization. Applicants also respectfully disagree with the Examiner's statement that Housley et al. teach recycling unreacted oxygen from the second oxidation stage to the first oxidation stage in view of "recycled mother liquor (which contains oxygen)." The Examiner added "(which contains oxygen)" to the previous quote. Nowhere in Housley et al. does it state that the recycled mother liquor contains oxygen.

The Examiner also cites page 1, paragraph 0003 of Housley et al. presumably because it discloses the use of acetic acid as a solvent. Applicants wish to remind the Examiner that "comprising an organic acid" was added to Claim 1 at the Examiner's recommendation to further distinguish Lewis et al., not Housley et al. For all of the reasons discussed above, as well as those set forth in the Amendment dated November 20, 2007, there would be no incentive for one skilled in the art to combine the references because incorporating the teachings of Lewis et al. into the Housley et al. process would not result in Applicants' inventive process which introduces at least a portion of the feed mixture from the first oxidation stage into a higher pressure second oxidation stage, and then recycles unreacted oxygen from the second oxidation stage to the first oxidation stage to achieve high oxygen utilization.

## Conclusion

The Applicants respectfully request that the Examiner consider the foregoing arguments and amendments. Applicants submit that Claims 1-3 and 5-28 are in condition for allowance and respectfully request allowance of these claims.

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Respectfully submitted,

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